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EXAMINER

CHANNAVAJALA, SRIRAMA T

ART UNIT PAPER NUMBER

2166

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/764,991

Applicant(s)

SASAKI ET AL.

Examiner

Srirama Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to RCE***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/05/2005 has been entered, and a non-final Office action is as follows:
2. Claims 1,5-6,10-11,15-16,20-21,25-26 have been amended [4/5/2005].
3. Claims 28-32 have been added [4/5/2005].
4. Examiner acknowledges applicant's response under 37 CFR 1.111 filed on 8/13/2004.
5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/29/2004 has been entered paper no. # 16.
6. Examiner acknowledges applicant's amendment filed on 3/29,2004, 4/29/2004, papers 13 and 16 respectively.
7. Claims 1,3,5-6,8,10-11,13,15-16,18,21,23,25-27 have been amended, paper no.13.

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8. Claims 1-32 are pending in this application.

***Drawings***

9. Examiner acknowledges applicant's drawings filed on 3/31/2004.

***Priority***

10. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan application no.10-252161, filed on 7 September 1998, Japan 10-208902, filed on 24 July 1998, PCT/JP99/03950 was filed on July 23, 1999.

***Information Disclosure Statement***

11. The information disclosure statement filed on 8/5/2003, paper no. # 6 and 9/10/2003, paper no. # 9 have been considered and a copy was enclosed to this office action, paper no. # 10.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***12. Claims 1-2,6-7,11-12, 21-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Maren et al., [hereafter Van Maren], US Patent No. 5579516 in view of Mine et al. [hereafter Mine], US Patent No. 5978336.***

13. As to Claims 1, 6,11,16, 21, Van Maren teaches a system which including 'a data storage medium for recording and reproducing a file managed using a volume/file structure in which a number of data recording operations to a same area is limited' [Abstract, col 2, line 27-32], data storage medium corresponds to optical disk(s),

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volume/file structure corresponds to file set on a multiple volume media as detailed in Abstract, col 2, line 27-29,

'start address information for an unrecorded area existing in a volume space information being recorded in the volume space as part of root directory file management information' [ col 2, line 42-50, col 4, line 21-30, line 55-62, fig 2, col 7, line 25-26], Van maren firstly directed to storing data files on a multiple volume media set, more specifically set of files on a multiple volume media in a international standard for ISO/IEC 13346 for optical media [see Abstract], secondly, Van Maren teaches directory structure, more specifically fig 1 is an example of directory hierarchy having root directory DO, sub-directories such a sD1-D2 as detailed in col 4, line 31-34], thirdly, Van Maren specifically directed to information control blocks or ICB is part of structure which allows file entry information, i.e., writing data into optical disk would be first written on ICB for directory DO, followed by directory DO [col 4, line 55-57], start address information is integral part of Van Maren's teaching because Van Maren specifically directed to directory structures or files that providing an index to the data files on the disk or set of disks, further Van Maren also suggests for example lists the address of its parent directory, i.e., root directory lists the address of its own ICBs that would have start addresses, as best understood by the examiner, address that specifies specific location of a data item or first element of a set of data items within a storage or output device which may be optical disk or any ISO/IEC standard data storage devices as suggested by Van Maren [see col 4, line 21-29], further it is noted that start address of an unrecorded area in a directory corresponds to the space that has been allocated for

each information control block that helps to built directories starting with directory DO that would have starting address [col 7, line 25-26]

It is however, noted that Van Maren does not specifically teach 'address information for a root directory', 'unrecorded area for which start address information is recorded is used for updating root directory file management information when a new file is recorded on the data storage medium', although Van Maren specifically suggests for example directory hierarchy structure such as detailed in fig 1 where root directory DO having various sub-directories such as D1,D2 and like, further Van Maren also suggests storage of files, specifically file name is ASCII form of ICB address or ICB address as a file name [see col 8, line 9-14].

On the other hand, Mine disclosed 'address information for a root directory' [col 4, line 27-33], Mine directed to file management data from the optical disk, more specifically, file management information including file tree structure that corresponds to root directories structure having data logical volume descriptor indicates directories and files can be retrieved from specific address(s) as detailed in col 4, line 27-33

'unrecorded area for which start address information is recorded is used for updating root directory file management information when a new file is recorded on the data storage medium' [col 4, line 50-52, line 56-67, col 5, line 1-6, fig 5-7], Mine teaches both recorded area / unrecorded area allocation information over entire file management region, more specifically creating unallocated areas on a logical block

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address as detailed in fig 5, element S23 step and fig 6 specifically indicating "unallocated block", further it is noted that Mine executes "finalization" check for recording a data in the future and has been allocated in the file management but presently contains no data recorded that corresponds to updating file management information as detailed in col 5, line 1-6, fig 7.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Mine into storing data files on a multiple volume media set of Van Maren et al., because both Van Maren and Mine directed to file structure, more specifically both are directed to organizing, managing various files in a directory information specifically used in optical disk management [see Mine: col 2, line 30-41, Van Maren: Abstract], also both Van Maren, Mine specifically follow ISO IEC 13346 standards [see Mine: col 4, line 15-17; Van Maren: Abstract:] and both are from same field of endeavor.

One of ordinary skill in the art at the time to applicant's invention to incorporate the teachings of Mine into storing data files on a multiple volume media set of Van Maren et al., because that would have allowed users of Van Maren to organize file management information specifically indicating unallocated areas on a logical block address, allocated/not allocated information over the entire file management region(s), bringing the advantages of optical disk capable of recording and reproduction file



management information as suggested by Mine col 2, line 25-29, thus improving quality and reliability of optical disk file management information.

14. As to Claims 2, 7, 12, 17, 22, Van Maren teaches a system which including 'start address information is recorded using an indirect entry for managing a root directory file recording area' [fig 2, col 4, line 63-67], root directory corresponds to fig 1, DO.

**15. Claims 3-4, 8-9, 13-14, 18-19, 23-24, 28-32, rejected under 35 U.S.C. 103(a) as being unpatentable over Leonhardt et al., [hereafter Leonhardt], US Patent No. 5485321 in view of Okuda, US Patent No. 5740445.**

16. As to Claims 3, 8, 13, 18, 23, Leonhardt teaches a system which including 'a data storage medium for recording and reproducing a file managed using a volume/file structure in which a number of data recording operations to a same are is limited' [Abstract, col 1, line 6-13], data storage medium for recording and reproducing corresponds to Leonhardt's computer data storage and recording, retrieving such as removable disks or magnetic type devices or optical disks and like as detailed in col 1, line 31-42], 'invalid data not used for retrieving volume/file structure, the invalid data being recorded before and after volume/file structure and a data file' [col 1, line 45-48, col 12, line 45-64, col 14, line 15-41, col 20, line 50-56], Leonhardt is directed to format and method for recording that is associated with control logic, more specifically, data storage method for linearly recording data blocks on a recording media [col 3,

line 10-14], further it is noted that Leonhardt specifically suggests for example recording header would have both specific fields designated for valid and invalid data [col 12, line 45-64, col 20, line 50-56], Leonhardt suggests for example virtual beginning of tape or VBOTx marker has ability to designates the beginning of a valid collection of data blocks, also VBOTx marker allows to track, and record valid and invalid data as detailed in fig 3, col 12, line 55-67, col 13, line 1-31],

‘invalid extent management information for managing an invalid data recording area, the invalid extent management information being recorded in the volume space as part of root directory file management information’ [col 1, line 45-48, col 12, line 45-64, col 20, line 50-56, col 21, line 57-67], recording valid or invalid data are integral part of Leonhardt’s teaching because Leonhardt specifically suggests for example header field are designated for valid and invalid data that are automatically set during Scratch data mode for optimizing the recording process as detailed in col 20, line 50-64

It is however, noted that Leonhardt does not specifically teach ‘address information for a root directory’. On the other hand, Okuda disclosed ‘address information for a root directory’ [fig 5, col 5, line 16-22, line 45-48, line 62-67]

It would have been obvious to one of the ordinary skill in the art at the time of applicant’s invention to incorporate the teachings of Okuda into format and method for recording optimization of Leonhardt et al., because both Leonhardt and Okuda directed to information or data recording medium, more specifically Leonhard is directed to

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performance optimized computer data recording media format [see Abstract], while Okuda is directed to directory information management for recording medium [see Abstract].

One of ordinary skill in the art at the time to applicant's invention to combine the references because that would have allowed users of Leonhardt et al., allocate specific address with a serial number to the root directory where collection of related data blocks on the recording tracks within a sequence of one or more group allocation units root directory entries are linked to the next directory entries [see Okuda: col 5, line 35-42, col 6, line 37-52], further it allows to both Leonhardt and Okuda search specific information related to data fields or files [see Okuda: col 6, line 4-15; Leonhardt: fig 6].

17. As to Claims 4, 9, 14, 19, 24, Leonhardt teaches a system which including 'invalid extent management information is recorded using an allocation descriptor for managing a root directory file recording area' [col 20, line 50-64, col 21, line 57-67, col 22, line 1-14].

18. As to claims 28-32, Leonhardt disclosed 'invalid extent management information is used to identify large invalid data recording areas to be used as file recording areas' [col 1, line 45-48, col 12, line 45-64].

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**19. Claims 5,10,15, 20, 25-27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Caffarelli, Fabrizio [hereafter Caffarelli], EP0730274A2 in view of Kurt Brian Robinson et al. [hereafter Kurt], GB 2251325 A published on 01 July 1992.**

20. As to Claims 5, 10, 15, 25-27, Caffarelli teaches a system which including 'a data storage medium for recording and reproducing a file managed using a volume/file structure in which a number of data recording operations to a same area is limited' [see Abstract],

'address information for a file set descriptor' [page 6, col 9, line 41-46], Caffarelli specifically teaches each file/directory record that including starting block address;

'root directory file management information is plurality of recorded as main chaining information and reserve chaining information' [page 9, col 15, line 23-46,, root directory corresponds to root directory that is assigned ID no. 1 as detailed in fig 9, chaining information corresponds to directory, subdirectory and file is identified by unique identifier is part of directory chain to locate required information as detailed in col 15, line 36-38],

'first address information corresponding to an area in which the main chaining information and reserve chaining information are recorded at a beginning of a volume space is recorded as part of a file set descriptor' [col 15, line 47-58, col 16, line 1-13, page 10, col 18, line 40-50],

'second address information corresponding to an area in which the main chaining information and reserve chaining information is update recorded is recorded as part of main chaining information and reserve chaining information' [col 13, line 31-46, col 16, line 46-58, col 17, line 1-6], reserve information area corresponds to Caffarelli fig 10, element 480, 505. It is however, noted that Caffarelli does not specifically teach 'reserve chaining information being a duplicate of the main chaining information', although Caffarelli does teach file management structure, more specifically recorded file/directory structure o locate the desired files as detailed in page 7, line 47-51, especially directory structure detailed in fig 9-10 that including reserved attribute flags element 480. On the other hand, Kurl disclosed 'reserve chaining information being a duplicate of the main chaining information' [see abstract, fig 8, element 112], Kurl specifically teaches directory entries are duplicated in reserve block(s) as detailed in fig 8, Abstract

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kurl et al. into compact recording system of Caffarelli because both Kurl, Caffarelli are directed to data recording and storage, more specifically, file an directory information storage and allocating reserved blocks [see col 9, line 38-46, col 11, line 49-52], while Kurl is directed to directory block comprises directory entry for identifying files in a directory structure [see fig 9-10] and allocating reserve blocks for duplicated files [see fig 8, element 112].

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One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kurl et al. into compact recording system of Caffarelli because that would have allowed users of Caffarelli to allocate and identifying reserve blocks to duplicate files bringing the advantages of retaining old files, further helps to maximize the integrity and reliability of the file structure as suggested by Kurl et al.

[page 8, line 10-11].

***Response to Arguments***

Applicant's arguments filed on 4/5/2005 with respect to claims 1-32 have been fully considered, for examiner's response, see discussion below:

a) At page 17, claims 1,6,11,21 applicant argues that "Van Maren does not disclose or suggest that the portion of the disk space where the ICBs are written is used for updating root directory file management information when a new file is recorded on the recording medium"

As to the argument [a], as best understood by the examiner Van Maren is directed to directory and file information control blocks or ICBs, specifically meta data and directory information [see col 2, line 33-36], it is also noted that Van Maren teaches control block or ICB is a structure that allows file entry information to be changed or writing file entries that corresponds to updating file management information, also see fig 1 root directory structure. As noted in the previous office action that Van Maren teaches directory structure, more specifically fig 1 is an example of directory hierarchy having root directory DO, sub-directories such as sD1-D2 as detailed in col 4, line 31-34], also, Van Maren specifically directed to information control blocks or ICB is part of structure which allows file entry information, i.e., writing data into optical disk would be first written on ICB for directory DO, followed by directory DO [col 4, line 55-57], start address information is integral part of Van Maren's teaching because Van Maren specifically directed to directory structures or files that providing an index to the data

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files on the disk or set of disks, further Van Maren also suggests for example lists the address of its parent directory, i.e., root directory lists the address of its own ICBs that would have start addresses, as best understood by the examiner, address that specifies specific location of a data item or first element of a set of data items within a storage or output device which may be optical disk or any ISO/IEC standard data storage devices as suggested by Van Maren [see col 4, line 21-29], further it is noted that start address of an unrecorded area in a directory corresponds to the space that has been allocated for each information control block that helps to built directories starting with directory DO that would have starting address [col 7, line 25-26]

b) At page 17, claims 1,6,11,21, applicant argues that Okuda also fails to teach or suggest a file including start address information for an unrecorded area existing in a volume space, where the unrecorded area is used for updating root directory file management information when a new file is recorded on a data storage medium.

As to the above argument [b] [as amended 4/5/2005], claims 1-2,6-7,11-12, 21-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Maren et al., US Patent No. 5579516 in view of Mine et al. US Patent No. 5978336. In the above office action, it is noted that Van Maren does not specifically teach, 'unrecorded area for which start address information is recorded is used for updating root directory file management information when a new file is recorded on the data storage medium', although Van Maren specifically suggests for example directory hierarchy structure such



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as detailed in fig 1 where root directory DO having various sub-directories such as D1,D2 and like, further Van Maren also suggests storage of files, specifically file name is ASCII form of ICB address or ICB address as a file name [see col 8, line 9-14].

On the other hand, Mine disclosed 'unrecorded area for which start address information is recorded is used for updating root directory file management information when a new file is recorded on the data storage medium' [col 4, line 50-52, line 56-67, col 5, line 1-6, fig 5-7], Mine teaches both recorded area / unrecorded area allocation information over entire file management region, more specifically creating unallocated areas on a logical block address as detailed in fig 5, element S23 step and fig 6 specifically indicating "unallocated block", further it is noted that Mine executes "finalization" check for recording a data in the future and has been allocated in the file management but presently contains no data recorded that corresponds to updating file management information as detailed in col 5, line 1-6, fig 7.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Mine into storing data files on a multiple volume media set of Van Maren et al., because both Van Maren and Mine directed to file structure, more specifically both are directed to organizing, managing various files in a directory information specifically used in optical disk management [see Mine: col 2, line 30-41, Van Maren: Abstract], also both Van Maren, Mine

specifically follow ISO IEC 13346 standards [see Mine: col 4, line 15-17; Van Maren: Abstract:] and both are from same field of endeavor.

One of ordinary skill in the art at the time to applicant's invention to incorporate the teachings of Mine into storing data files on a multiple volume media set of Van Maren et al., because that would have allowed users of Van Maren to organize file management information specifically indicating unallocated areas on a logical block address, allocated/not allocated information over the entire file management region(s), bringing the advantages of optical disk capable of recording and reproduction file management information as suggested by Mine col 2, line 25-29, thus improving quality and reliability of optical disk file management information.

c) At page 18, claims 3,8,13,23, applicant argues "Leonhardt does not disclose or suggest that the header is recorded in a volume space as part of root directory file management information"

d) At page 19, claims 3,8,13,23, applicant argues that Okuda also fails to teach or suggest a file including invalid extent management information for managing an invalid data recording area, where the invalid extent management information is recorded in a volume space as part of root directory file management information".

As to the argument [c-d], as best understood by the examiner Leonhardt is directed to optimizing computer data recording media format, more specifically, using series of virtual volume on a single physical volume [see Abstract], it is understood that

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volume is related to one or more file may be recorded and is part of data storage [see col 8, line 45-50], also collections of volume of data for example store a collection related data blocks having fields or records. It also noted that Leonhardt suggests recording data blocks also known that a medium comprising a volume is formatted, header is specified in the media location is part of the control information [col 9, line 60-63]. Leonhardt also teaches VBOT designates valid collection of data blocks containing records including valid and invalid data is part of file management information as detailed in col 20, line 50-64. Although Leonhardt suggests header fields are designated for valid and invalid data that are automatically set during scratch data mode for optimizing the recording process [see col 20, line 50-64], Leonhardt does not specifically teach 'address information for root directory'. On the other hand, Okuda disclosed address information for root directory as detailed in col 5, line 16-22, line 45-48, line 62-67, fig 5].

f) At page 20, claims 5,10,15,20,25-27, applicant argues that "Caffarelli does not disclose that root directory file information is plurally recorded as main chaining information and reserve chaining information, the reserve chaining information being a duplicate of the main chaining information.

As to the above argument [f], claims 5,10,15, 20, 25-27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Caffarelli, EP0730274A2 in view of Kurt et al., GB 2251325 A published on 01 July 1992. It is noted in the above office action that

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Caffarelli does not specifically teach 'reserve chaining information being a duplicate of the main chaining information', although Caffarelli does teach file management structure, more specifically recorded file/directory structure to locate the desired files as detailed in page 7, line 47-51, especially directory structure detailed in fig 9-10 that including reserved attribute flags element 480. On the other hand, Kurl disclosed 'reserve chaining information being a duplicate of the main chaining information' [see abstract, fig 8, element 112], Kurl specifically teaches directory entries are duplicated in reserve block(s) as detailed in fig 8, Abstract

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kurl et al. into compact recording system of Caffarelli because both Kurl, Caffarelli are directed to data recording and storage, more specifically, file and directory information storage and allocating reserved blocks [see col 9, line 38-46, col 11, line 49-52], while Kurl is directed to directory block comprises directory entry for identifying files in a directory structure [see fig 9-10] and allocating reserve blocks for duplicated files [see fig 8, element 112].

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kurl et al. into compact recording system of Caffarelli because that would have allowed users of Caffarelli to allocate and identifying reserve blocks to duplicate files bringing the advantages of retaining old files, further helps to

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maximize the integrity and reliability of the file structure as suggested by Kurl et al.

[page 8, line 10-11].

Examiner applies above discussed arguments to dependent claims

2,4,7,9,12,14,17,19,22, 24,28-32.

### ***Conclusion***


#### **The prior art made of record**

- |    |               |         |
|----|---------------|---------|
| a. | US Patent No. | 5579516 |
| b. | US Patent No. | 5485321 |
| c. | EP0730274A2   |         |
| d. | US Patent No. | 5740445 |
| e. | US Patent No. | 5978336 |
| f. | GB 2251324A   |         |

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 703/872-9306 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

SC  
Patent Examiner.  
May 12, 2005.

  
SRIRAMA CHANNAVAJJALA  
PRIMARY EXAMINER